



ENGINEER RECEIVES TECHNOLOGY TRANSITION AWARD FOR WASTEWATER TREATMENT SYSTEM

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Payoff

The selection of Mr. James A. Hurley for the coveted Lieutenant General Thomas R. Ferguson, Jr. Award for Excellence in Technology Transition highlights the important contributions researchers at the Airbase and Environmental Technology Division have made. His efforts in developing a wastewater treatment system, capable of handling ammonium perchlorate contaminated wastewater, may help the Minuteman III Propulsion Replacement Program by acting as a backup system.

Accomplishment

Mr. James A. Hurley of the Materials and Manufacturing Directorate's Airbase and Environmental Technology Division received the Lieutenant General Thomas R. Ferguson, Jr. Award for Excellence in Technology Transition. He was recognized for the development of a process that provides the DoD with a capability to effectively manage wastewater at solid propellant rocket motor production facilities.

Background

Ammonium perchlorate (AP), a compound that is harmful to the environment, is used in large rocket motor solid propellants and poses a challenge for demilitarization/disposal operations because it must be treated as hazardous waste. For example, the Minuteman III Propulsion Replacement Program will remove more than 35 million pounds of propellant from 1,200 first-and second-stage motors in order to recycle the valuable motor cases. The high-pressure water washout process used to remove the propellant produces large quantities of water contaminated with up to 12 percent AP. Through a Cooperative Research and Development Agreement with Thiokol Corporation of Brigham City, UT, researchers, led by Mr. Hurley, designed a bioreactor system that uses microbes to transform AP into harmless chloride. The system can reduce perchlorate concentration from 6,000 ppm (parts per million) to below detectable limits at a cost of less than 20 cents per gallon. Mr. Hurley's orchestration of the bioreactor program includes support from the Joint Ordnance Commanders Group, the Environmental Security Technology Certification Program and private industry. He designed a program to minimize cost and risk by maximizing the use of existing equipment and facilities, and redirected in-house efforts in order to address the technical objectives while reducing the technical risk of implementation. The pilot bioreactor system will be optimized and retrofitted for integration into Thiokol's production facility.